

## WHAT IS CLAIMED IS:

1. A portable card adapted to be used in a card processing system having a data processing station comprising

a data storage device adapted to interact with a data processing station when a portable card and a data processing station are rotationally moved relative to each other, said data storage device including

a substrate having a predetermined shape; and  
at least one layer of magnetic material for storing magnetic signals.

2. The portable card of claim 1 wherein said at least one magnetic material layer is a thin film layer of high density, magnetic material having a predetermined magnetic field orientation for storing data.

3. The portable card of claim 1 wherein said substrate has two surfaces and said data storage device is located on at least one of said two surfaces.

4. The portable card of claim 1 having an obverse side and a converse side and wherein said substrate has two surfaces and wherein said data storage device is located on one of said two surfaces.

5. The portable card of claim 1 wherein said portable card is rotated about its central axis relative to said data processing station.

6. The portable card of claim 1 wherein said substrate is substantially planar and generally rectangular in shape and said data storage device is generally rectangular in shape.

7. The portable card of claim 6 wherein said substantially planar and generally rectangular shaped substrate including said data storage device is rotated relative to a data processing

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station.

8. The portable card of claim 1 wherein said substrate is substantially planar and generally rectangular in shape and said data storage device is generally circular in shape.

9. The portable card of claim 8 wherein said generally circular shaped data storage device is fixedly mounted within said substantially planar and generally rectangular shaped substrate.

10. The portable card of claim 9 wherein said substantially planar and generally rectangular shaped substrate including said generally circular shaped data storage device data storage device is rotatable proximate a data processing station.

11. The portable card of claim 1 wherein said data processing station includes a transducer.

12. The portable card of claim 11 wherein said transducer is an inductive head.

13. The portable card of claim 12 wherein said transducer is a thin film head.

14. The portable card of claim 1 wherein said at least one layer of magnetic material is a sputtered layer.

15. The portable card of claim 1 wherein said at least one layer of high density magnetic material is a plated layer.

16. The portable card of claim 1 wherein said at least one layer of high density magnetic material is an oxide layer.

17. The portable card of claim 1 wherein said at least one layer of magnetic material is a web coated layer.

18. A card and card writer/reader system comprising an encodeable card having

a body having upper and lower surfaces and side and end edges, said body including on at least one of said upper and lower surfaces a data storage section adapted to interact with a data processing station when said card is rotated relative to said data processing station to at least one of write encoding signals in said data storage section and read in encoded signals from said data storage section, said data storage section including

at least one layer of high density storage material for storing data; and

a writer/reader having a transducer for at least one of writing encoding signals in said data storage section and reading encoded signals from said data storage section during rotating movement of said card relative to the data processing station to enable data flow between said data storage section and said transducer.

19. The card and card reader system of claim 18 wherein said transducer is an inductive head.

20. The card and card reader system of claim 19 wherein said transducer is a thin film head.

21. A card and card writer/reader system comprising a magnetically encodeable card having

a body having upper and lower surfaces and side and end edges, said body including on at least one of said upper and lower surfaces a data storage device wherein said card is adapted to be rotated relative to a data processing station, said data storage device including at least one layer of magnetic material having a predetermined magnetic field orientation for storing

data;

a first transducer for reading said magnetically encoded signals from said data storage device during relative movement of said card relative to the data processing station to enable data flow between said data storage device and said transducer; and

a second transducer for writing magnetically encoding signals in said data storage device as magnetically encoded signals during rotational movement of said card relative to the data processing station to enable data flow between said data storage device and said transducer.

22. The card and card writer/reader system of claim 21 wherein said transducer is an inductive head.

23. The card and card writer/reader system of claim 22 wherein said transducer is a thin film magnetic head.

24. A method for reading a card with a card reader comprising the steps of

forming on a substrate of a card a data storage section wherein said card is adapted to be rotated about its central axis relative to a data processing station to at least one of write encoding signals in said data storage section as encoded signals and read encoded signals from said data storage section; and

rotating said card about its central axis to position said data storage section relative to said data processing station to interface said data storage section relative to a transducer to enable data flow therebetween.

25. The method of claim 24 wherein the step of forming includes forming a data storage device having at least one layer of magnetic material having a predetermined magnetic field orientation for storing data.

26. The method of claim 24 wherein said step of rotating

includes moving a transducer relative to the data storage section.

27. The method of claim 26 wherein the step of moving includes moving a transducer that is an inductive head.

28. The method of claim 26 wherein the step of moving includes moving a transducer that is a thin film head.

29. A method for reading a card having a generally rectangular shape with a card reader comprising the steps of forming on a substrate of a card a data storage section including a layer of magnetic material having a predetermined magnetic orientation for storing data in a predetermined axis; and

rotating said card about its central axis relative to a data processing station to interface said data storage section relative to a transducer to enable data flow therebetween.

30. A data storage device comprising a card adapted to be used in a data storage device processing system having a data processing station comprising a card having a generally rectangular shape and a substance having a magnetic material data storage device formed therein and when said card is adapted to be rotated relative to and to interact with a data processing station, said card having form, said data storage device including at least one layer of magnetic material for storing magnetic signals.

31. The data storage device of claim 30 wherein said at least one layer of magnetic material has a predetermined field of orientation for storing magnetic signals.

32. A magnetic signal processing apparatus comprising a portable card adapted to be used in a card processing system having a data processing station comprising

a data storage device adapted to interact with a data processing station when a portable card and a data processing station are rotationally moved relative to each other, said data storage device including

a substrate having a predetermined shape;

at least one layer of magnetic material for storing magnetic signals;

a support member for receiving and rotating said data storage device;

a drive member operatively coupled to said support member to provide rotational movement between the portable card and a data processing station to provide transducing action therebetween for reading and storing magnetic signals in the data storage device.

33. A card processing system comprising

a portable card adapted to be used in a card processing system having a data processing station comprising

a data storage device adapted to interact with a data processing station when a portable card and a data processing station are rotationally moved relative to each other, said data storage device including

a substrate having a predetermined shape; and

at least one layer of magnetic material for storing magnetic signals;

a support member for receiving and rotating said portable card;

a drive member operatively coupled to said support member to provide rotational movement between the portable card and a data processing station to provide transducing action therebetween; and

a transducer actuating member including a stepper motor for

positioning a transducer located in a data processing station relative to the rotating portable card for reading and storing magnetic signals in the data storage device.

34. The system of claim 33 wherein said data storage device is rotated relative to the data processing station.

35. The system of claim 33 wherein said substrate is substantially planar and generally rectangular in shape and said data storage device is generally rectangular in shape.

36. The system of claim 34 wherein said portable card having said substantially planar and generally rectangular shaped substrate including said data storage device is rotated relative to a data processing station.

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